

Remarks

The various claims that have been amended above were amended to better state the present invention as well as correct typographical errors and antecedents where necessary.

Claims 1-4, 6, 11, 14, 18-21, 24, 27 and 28 were rejected by the Examiner under 35 USC §102(e) as being anticipated by Sandstrom. Of the claims rejected under §102, claims 1, 14, 20 and 24 are independent claims and the discussion will initially be focused on those claims.

In support of the Examiner's rejection of independent claims 1, 14 and 20 the Examiner states:

"Sandstrom discloses a method of fabricating micro devices from a workpiece, comprising: illuminating **a single column on micro device cells** on a **mask** with pulses of radiation; and patterning the workpiece with images of the illuminated single column to form corresponding adjacent columnar exposure fields by continuously moving the substrate in the direction perpendicular to the long axis of the columnar exposure fields during illumination of the mask so that **each columnar field is formed by a single pulse of radiation.**" (emphasis added)

Applicant has several problems with the Examiner's characterization of what is shown and described by Sandstrom. One of the most critical is the Examiner's characterization that Sandstrom discloses that the radiation source illuminates a mask.

Nowhere in Sandstrom does he disclose illuminating a mask. What Sandstrom says at col. 6, line 56 is:

"A first preferred embodiment is a deep UV pattern generator for photomasks using an SLM of 2048x512 micro-mirrors."

This says nothing about illuminating a mask with radiation pulses. This sentence is introducing a process for **pr ducing** a photomask, not illuminating one.

Reading further in that paragraph at lines 61-63, Sandstrom states:

"The SLM is illuminated by the laser through a beam-scrambling illuminator and the reflected light is directed to the projection lens and further to the photosensitive surface." (emphasis added)

This sentence clearly is silent as to the illumination of a mask with its image projected to the workpiece surface. Sandstrom discusses the operation of the well known SLM (spacial light modulator) and no mention of the illumination of a mask to create the image on the surface of the workpiece, the use of a mask as stated by the Examiner is clearly not disclosed or suggested by Sandstrom.

From numerous portions of Sandstrom it is clear that what he is illuminating in his process is a SLM which then reflects a pattern to the workpiece based on the positioning of the micro-mirrors of the SLM from a digitally stored pattern (cf. Abstract, Fig. 1 and the description thereof in col. 1, and Fig. 6 and the description thereof in cols. 11-12).

Fig. 6 is described in the Brief Description of the Drawings as showing "a preferred embodiment of a pattern generator according to the invention". Then in the description of Fig. 6 the various elements shown in that figure are identified as SLM 601, illuminator 602, scrambler 603, imaging optical system 604, workpiece stage 605, positioning control 606, hardware and software handling system 607, aperture 608, beamsplitter 609, pattern rasterizer 610, linearizer 611 and DAC (digital to analog converter) 612. No mask is shown or discussed in the detailed description of Fig. 6.

The Examiner also states that Sandstrom teaches that **"each columnar field is f rmed by a single pulse f radiati n"**.

In the Abstract, lines 15-16 Sandstrom says "...exposing said pattern **in at least two separate exposures**,...". At col. 8, lines 21-26, Sandstrom says "A **first exposure** is made of the entire pattern with 90% power. The actual flash energy and time position for each flash is recorded. A **second exposure** is made with nominally 10% exposure...". Also in claim 1, Sandstrom's only independent claim, he says at col. 14, lines 1-5 "...further exposing said pattern in **at least two separate exposures**, where one of the exposure corrections is applied for errors occurring during the other exposure, wherein the **two separate exposures** being made on the same workpiece." There is no claim using only a single pulse probably because Sandstrom does not disclose using only one pulse.

To support the Examiner's rejection of independent claim 24 he also has taken the position the Sandstrom discloses a mask with a single column of microdevice cells and the use of a single pulse of radiation to form of each one of the exposure fields on the workpiece. As pointed out above in response to the Examiner's position with respect to claims 1, 14 and 20, Sandstrom neither shows nor suggests either of those features.

Claims 1, 14, 20 and 24 have each been amended to clarify the invention being claimed and to provide antecedent basis throughout all of the claims. As amended, the combination of features of claims 1, 14, 20 and 24 are not shown or suggested by, or obvious from, Sandstrom.

Further, since each of the dependent claims includes the limitations of the independent claim from which they each depend, and they all depend from one of claims 1, 14, 20 and 24, the combined features of those dependent claims are not shown or suggested by, or obvious from, Sandstrom.

Claims 5, 9, 15, 16, 22 and 25 were rejected by the Examiner under 35 USC

§103(a) as being obvious from Sandstrom. Each of these claims are dependent from one of the independent claims 1, 14, 20 and 24 addressed above with reference to Sandstrom. Since each of the dependent claims 5, 9, 15, 16, 22 and 25 includes the limitations of the independent claim from which they each depend, and they all depend from one of claims 1, 14, 20 and 24, the combined features of those dependent claims also are also not shown or suggested by, or obvious from, Sandstrom.

Claim 23 was rejected by the Examiner under 35 USC §103(a) as being obvious from Sandstrom and Applicant's admitted prior art. Here, claim 23 is dependent from independent claim 20 and since the primary reference relied on here by the Examiner is also Sandstrom, and since dependent claim 23 includes the limitations of claim 20 the combined features of dependent claim 23 are also not shown or suggested by, or obvious from, Sandstrom.

Claims 10, 13 and 26 were rejected by the Examiner as being obvious from Sandstrom in view of Takiguchi. Since each of these dependent claims includes the limitations of the independent claim from which they each depend, and they all depend from one of claims 1 and 24, the combined features of those dependent claims are also not shown or suggested by, or obvious from, Sandstrom.

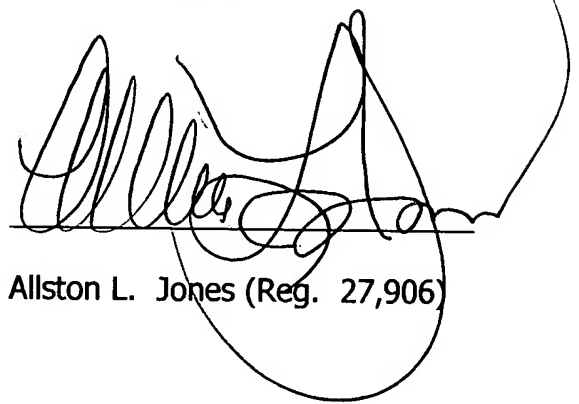
Therefore, for this rejection to stand, Takiguchi must show or suggest all of the features claimed that it has been shown above that Sandstrom does not so show or suggest. Of the combined features of claims 10, 13 and 26, all that could be found in Takiguchi is the disclosure of the fabrication of thin-film heads which are only mentioned in dependent claims 10, 13 and 26, and nothing of the features that have been shown to be missing from Sandstrom. Thus, the combined features of each or claims 10, 13 and 26, are not obvious from the combination of Sandstrom and Takiguchi.

All that being said, it is respectfully submitted that all of claims 1-28 as amended are patentably distinguishable from the references cited by the Examiner.

Thus claims 1-28 are in condition for allowance and their allowance is respectfully requested.

Favorable action is respectfully requested.

Respectfully submitted,
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A handwritten signature in black ink, appearing to read 'Allston L. Jones', is written over a horizontal line. The signature is stylized with large, flowing loops.

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